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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,411	10/16/2001	George H. Kitchen III	70008-9101	5840
5179	7590	01/27/2006	EXAMINER	
PEACOCK MYERS, P.C. 201 THIRD STREET, N.W. SUITE 1340 ALBUQUERQUE, NM 87102			TOOMER, CEPHIA D	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/981,411

Applicant(s)

KITCHEN ET AL.

Examiner

Cephia D. Toomer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 172-184,186-208,211-217,219-237,239-254,256-266,268-283,285,286,288-300 and 302-329.

Continuation of Disposition of Claims: Claims rejected are 172-184,186-208,211-217,219-237,239-254,256-266,268-283,285,286,288-300 and 302-329.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 4, 2005 has been entered.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 192, 201, 208, 231, 252, 265, 285, 299 and their dependents (claims 192-316) are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The specification discloses that fuel additives of the current invention comprise a stabilizer (fuel stabilizer) and an organometallic compound and that these components are critical or essential to the practice of the invention, but the stabilizer is not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant discloses that these components are always present in the fuel composition. Therefore, by not including the stabilizer in

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the independent claims, it appears that Applicant is setting forth no criticality in the use of the stabilizer.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 184, 189, 252, 253, 256, 257, 258, 265, 268, 269, 279 and 280 are rejected under 35 U.S.C. 103(a) as being unpatentable over Croudace (US 4,444,565).

Croudace teaches a fuel additive concentrate comprising dicyclopentadienyl iron (see abstract). The additive concentrate contains 1-50 grams per gallon and a diluent (see col. 3, lines 58-68). The iron content of the fuel is between 0.0001 and 10 grams per gallon of fuel (see col. 4, lines 60-64; col. 5, lines 20-36). The fuel may contain conventional stabilizing additives such as antioxidant, metal deactivators (phenylenediamines) and anti-knock agents such as manganese methyl cyclopentadienyl tricarbonyl (see col. 5, lines 40-51). The diluents include hydrocarbon solvents (see col. 6, lines 5-14).

Croudace differs from the claims in that he teaches the proportions of the components as grams per gallon whereas the present claims recite the proportions as parts by weight. However, it is the examiner's position that the ranges are close enough

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that one skilled in the art would reasonably expect that the fuel composition would possess the same properties, absent evidence to the contrary.

5. Claims 172, 174, 176-178, 181-184, 186, 189-191, 208, 211-217, 219, 220, 223-226, 252, 256-258, 261-266, 268, 269, 273-276, 279-281, 299-300, 307-310, 313, 315 and 316 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham (US 5,679,116).

Cunningham teaches a fuel composition comprising at least one fuel soluble detergent/dispersant (functions as stabilizer and/or dispersant) such as amides or long chain aliphatic hydrocarbons (molecular weight at least 300) having a polyamine attached thereto; at least one cyclopentadienyl complex, preferably iron, and at least one fuel soluble liquid carrier (see abstract; col. 1, lines 50-66; col. 2, lines 12-18, 44-49; col. 3, lines 27-29). Examples of the cyclopentadienyl complex include ferrocene, monomethyl ferrocene and bis(methylcyclopentadienyl) (see col. 10, lines 2-14). The carrier may be PAO, hydrotreated or non-hydrotreated polypropylene or polybutene; mineral oils, esters and mixtures of two or more carriers (see col. 11, lines 24-35). The oils have low viscosity indices and viscosities, suggests 20 wt or less (see col. 11, line 64-67; col. 12, lines 1-54).

Cunningham teaches that the fuel additive contains from 20-500 ppm detergent/dispersant, 0.0078 to about 0.25 grams of metal cyclopentadienyl complex, up to about 5 wt% of antioxidants (additional stabilizer) and metal deactivators (see col. 14, lines 33-39, 48-60). Cunningham teaches the limitations of the claims other than the differences that are discussed below.

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Cunningham differs from the claims in that he does not specifically teach the ranges as parts by weight, but instead as grams per gallon and ppm. However, it is the examiner's position that the ranges taught by Cunningham are close enough to those of the present invention that one skilled in the art would expect that the composition of Cunningham would have the same properties, absent evidence to the contrary.

6. Claims 230, 253, 254, 282, 283 and 314 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham as applied to the claims above, and further in view of Kitchen (US 4,609,379).

Cunningham has been discussed above. Cunningham fails to teach that the metal deactivator is a propane diamine. However, Kitchen teaches this difference in a fuel additive (see abstract; col. 2, lines 42-44).

It would have been obvious to one of ordinary skill in the art to have selected diamine metal deactivators because Cunningham desires conventional deactivators and Kitchen teaches that the propane diamines are conventional metal deactivators.

7. Claims 172-184, 186-208, 211-217, 219-228, 230-237, 239-246, 249-254, 256-266, 268-277, 279-283, 285, 286, 288-300, 302-311, 313-324 and 326-329 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brennan (US 5,385,588) in view of Farrar (US 4,998,876).

Brennan teaches a method for enhancing a fuel additive concentrate package so as to improve its shelf-life stability wherein the additive comprises a detergent/dispersant, a solvent such as Super High Flash Naphtha (see abstract; col. 2, lines 56-68; col. 3, lines s1-5). The fuel may be gasoline or diesel (see col. 1, lines 15-

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18). The detergent/dispersant includes C₅₀-C₁₀₀₀ hydrocarbyl substituted succinimides and polyamines (see col. 4, lines 24-64). The additive concentrate contains carrier fluids selected from polyalphaolefins and mineral oils having a viscosity of 100-4500 SUS at 38 °C (meets limitation regarding 20 wt oil). Brennan teaches that the additive concentrate may contain biocides and metallic combustion improvers (see col. 9, lines 61-66). In example 2, the additive concentrate is prepared for a diesel fuel and contains a succinimide (detergent/dispersant), Super High Flash Naphtha, a C₁₂-C₁₄ t-alkylamine mixture (stabilizer), N,N-disalicylidene-1,2-propylenediamine (metal deactivator). Brennan teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Brennan differs from the claims in that he does not specifically teach an iron-containing organometallic compound. However, Farrar teaches this difference.

Farrar teaches a process for improving combustion of liquid hydrocarbons and reducing NO_x emissions. The process comprises burning the liquid hydrocarbon in the presence of an additive composition to improve measurably the combustion efficiency (see abstract). The liquid hydrocarbon includes gasoline and diesel fuel (see col. 2, lines 52-57). The additive composition comprises a compound selected from the group consisting of ferrocene and its derivatives (see col. 1, line 58 through col. 2, lines 1-14) and an organic carrier fluid in which the ferrocene is soluble. The carrier may be a high flash point solvent (see col. 4, lines 10-30). The additive is present in the fuel in an

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amount from 0.1 to 100 ppm if iron (overlaps claimed proportions) (see col. 4, lines 39-44).

It would have been obvious to one of ordinary skill in the art to include the iron containing organometallic compound because Brennan especially desires a metallic combustion improver and Farrar teaches the ferrocene and its derivatives are added to liquid hydrocarbon fuels to "improve measurably the combustion efficiency."

In the second aspect, Brennan differs from the claims in that the proportions of the components are in percentage per concentrate. However, it is the examiner's position that the amount of these compounds in percentages in the concentrate equates to the claimed proportions once diluted with the fuel.

In the third aspect, Brennan differs from the claims in that he does not specifically teach that the stabilizer has more than 14 carbon atoms. However, the claimed stabilizer is a homolog (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) and are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also In re May, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) .

8. Claims 229, 247, 248, 278, 297, 312 and 325 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brennan and Farrar as applied to claims above, and further in view of Juda (US 3,951,833).

Brennan has been discussed above. Brennan fails to teach the claimed biocide. However, Juda teaches that the triazine compound is used in hydrocarbon fluids as a biocide (see col. 1, lines 7-28; col. 2, lines 17-28).

It would have been obvious to one of ordinary skill in the art to choose a triazine compound as the biocide of Brennan because Juda teaches that the compound is a conventional biocide that will perform its attendant function in hydrocarbon fluids.

9. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Croudace fails to teach proportions of the fuel stabilizer and polyamine deactivator.

Croudace teaches these components in a fuel composition that has similar properties to the fuel composition of the present invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the proportions of the fuel stabilizer and deactivator through routine experimentation for best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Applicant argues that Cunningham does not disclose an amine stabilizer but instead teaches a succinimide.

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Cunningham teaches that the detergent/dispersant (fuel stabilizer) may be an imide and/or long chain aliphatic hydrocarbon having a polyamine attached thereto.

Applicant argues that Cunningham does not teach a 20 wt or less lubricant.

Cunningham teaches that mineral oils of his invention have low viscosities and a 20 wt or less oil is encompassed by the oils taught at column 12, lines 24-30.

Applicant argues that Cunningham does not teach the concentration of the metal deactivators.

The examiner respectfully disagrees. In the examples and at column 14, lines 33-39, Cunningham teaches the proportions of the metal deactivator.

Applicant argues that Cunningham fails to teach a polymeric dispersant.


The examiner respectfully disagrees. Cunningham teaches that succinimides derived from polyalphaolefins may be use as the dispersant. This is a polymeric dispersant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cephia D. Toomer
Primary Examiner
Art Unit 1714

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